

## A TRUNKING CONNECTING DEVICE

### BACKGROUND OF THE INVENTION

#### Field of the invention

5 The present invention relates generally to interconnecting lengths of trunking used to install electrical devices of any kind, such as socket outlets or other devices, and to route electrical cables or conductors connected to them, whether in the form of baseboards when such trunking is installed to form the  
10 baseboard at the bottom of a wall, or in the form of moldings when they are installed on the surface of walls, for example alongside the frame of a door or window opening or at the junction between a wall and a ceiling.

The invention relates more particularly to a  
15 trunking connecting device including a plate for joining the backs of the trunking base sections, said plate being provided at each of its edges adjacent the cut edges of the trunking base sections with longitudinal tongues adapted to bear on the two opposed faces of each back.

20 The invention is applied with particular advantage to making corner connecting devices and trunking branch connection or junction devices.

#### Description of the prior art

25 The document FR 2 731 496 (WO96/28681) describes a connecting device as defined above in which the longitudinal tongues of the plate, which are adapted to be applied to the face of the back of trunking facing toward the wall to which said back is fixed, have a certain thickness and therefore a certain stiffness.

30 In this case, according to the above document, in order not to impede the fixing of the trunking base section to the wall, the longitudinal tongues are received in housings defined by the back of the trunking base section, having a recessed U-shaped section relative  
35 to the surface of the back which is applied to the wall

to which it is fixed.

Additionally, according to the above document, the longitudinal tongues carried by the plate and intended to be applied to the face of the back opposite that applied to the wall project relative to the face that carries them and have a globally Z-shaped section so that they bear elastically on said face of the back of the trunking base section and compensate play resulting from the assembly of the other longitudinal tongues into the corresponding housings on the opposite face of said back.

The arrangement previously described, apart from the fact that it is relatively complex, requires a special adaptation of the back of the trunking base section.

It is therefore relatively costly to produce.

#### SUMMARY OF THE INVENTION

To palliate the above problem, the present invention proposes a device for connecting at least two lengths of trunking, including a plate for joining backs of base sections of the trunking, the plate having on each of its edges adjacent cut edges of the trunking base sections longitudinal tongues adapted to bear on two opposite faces of each back, which tongues are substantially plane, have a thickness from about 0.2 mm to about 1 mm, and are adapted to bear elastically against the opposite faces of the back.

In accordance with the invention, the relative thinness of the longitudinal tongue(s) intended to be applied to the face of the back which is applied to the wall to which the trunking is fixed therefore avoids the need for special adaptation of the back of the trunking and of the longitudinal tongues which are applied to the face of the back opposite that which is applied to the wall, which preserves intact the back which is useful for running cables or conductors or for installing electrical

devices in said trunking.

Other advantageous and non-limiting features of the connecting device according to the invention include:

- 5       - three longitudinal tongues on each edge of the plate adjacent a cut edge of a trunking base section are disposed in an arrangement resembling the shape of a winners' podium, two end tongues are positioned on the top face of the plate so as to be placed against the top face of the back of the trunking base section, and a
- 10       central tongue is positioned on a bottom face of the plate so as to be placed against a bottom face of the back of the trunking base section;
- the longitudinal tongues have the same thickness;
- the thickness of each longitudinal tongue is
- 15       approximately 0.5 mm;
- the plate is plane and has at least two transverse ends adapted to be placed adjacent two cut edges of two lengths of trunking;
- the two transverse ends of the plate are at an
- 20       angle to each other enabling connection of two lengths of trunking extending in two different directions in the same plane;
- the plate has walls on its longitudinal edges adapted to be aligned with lateral flanges of the
- 25       trunking base sections to provide continuous walls;
- the plate carries on its top face a pillar with an orifice through it that opens onto the bottom face of the plate, the orifice forming a passage for a fixing member for fixing the plate to a wall supporting it;
- 30       - the plate has two parts with an inside or outside corner between them and each edge of each part of the plate adapted to be placed adjacent a cut edge of a trunking base section is provided with longitudinal tongues;
- 35       - the two parts of the plates are fixed relative to

each other;

- the parts of the plates are articulated together by a junction part forming a hinge; and

- the plate is molded in one piece from a plastics material.

The following description, which is given with reference to the accompanying drawings, which are provided by way of non-limiting example, explains in what the invention consists and how it is put into effect.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective plan view of one embodiment of a connecting device according to the invention installed between two lengths of trunking disposed in a corner.

Figure 2 is a bottom view of the connecting device shown in figure 1.

Figure 3 is a perspective side view of a variant of the connecting device shown in figure 1.

Figure 4 is a view of the connecting device shown in figure 3 in section taken along the line A-A.

Figure 5 is a perspective plan view of a cover of the connecting device shown in figure 1.

Figure 6 is a bottom view of the cover shown in figure 5.

Figures 7a to 7d are plan views of the cover shown in figure 5 in different angular configurations.

Figure 8 is a perspective view of a variant of the connecting device according to the invention positioned in a corner where walls meet to provide a junction between three lengths of trunking extending in three different directions.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

First of all, note that in the embodiments shown in the various figures identical or similar components are identified as far as possible by the same reference

symbols and are not described again each time.

Figures 1 and 2 show a first embodiment of a device 100 for connecting two lengths of trunking 10, 20. This particular connecting device 100 is a branch connection device for connecting two lengths of trunking 10, 20 extending in two different directions in the same plane.

Each length of trunking 10, 20 has a U-shaped base section with a back and two lateral flanges 12, 13, 22, 23. Each of the lateral flanges 12, 13, 22, 23 of each length of trunking 10, 20 has at the top a transverse rim 12a, 13a, 22a, 23a on the side toward the interior of the trunking for attaching a cover section (not shown).

The connecting device 100 shown in figures 1 and 2 includes a plate 110 for joining the backs of the base sections of the lengths of trunking 10, 20.

In the embodiment shown, the plate 110 is plane and has two transverse ends 111, 112 adapted to be placed adjacent cut edges 11, 21 of the two lengths of trunking 10, 20.

These two transverse ends 111, 112 of said plate 110 are at an angle to each other for connecting two lengths of trunking 10, 20 extending in two different directions in the same plane at an angle to each other from about 85 degrees to about 95 degrees.

The plate 110 also has, on its longitudinal edges, walls 113, 113' adapted to be aligned with the lateral flanges 12, 13, 22, 23 of the base sections of the lengths of trunking 10, 20 to provide a continuous wall.

The plate 110 carries on its top face a pillar 115 through which extends an orifice 116 that opens onto the bottom face of the plate 110, the orifice forming a passage for a fixing member such as a screw or a brad for fixing said plate 110 to a wall supporting it.

As shown in figure 1 in particular, in the top part of the pillar 115 is a tongue 117 projecting from the

peripheral surface of said pillar 115 and providing a support for a cover of said plate described later with reference to figures 5 to 7.

5 To enable the tongue 117 to be extracted from the mold, an orifice 118 of identical shape but with larger dimensions is provided in the plate, facing the tongue 117.

10 The pillar advantageously avoids the need to fit a fixing member for the plate above the level of the edges of the longitudinal walls 113, 113' extending the lateral flanges of the lengths of trunking, which protects them from being struck with a hammer when driving a fixing brad into a wall via the orifice 116 for fixing the plate 110 to said wall.

15 Each of the edges 111, 112 of the plate 110 adjacent the cut edges 11, 21 of the base sections of the length of trunking 10, 20 has longitudinal tongues 121, 122, 123, 131, 132, 133 adapted to bear on the two opposite faces 10a, 10b, 20a, 20b of each back of each  
20 base section of a length of trunking 10, 20.

The term "longitudinal" refers to the longitudinal direction of the trunking on which said tongues bear.

The tongues 121, 122, 123, 131, 132, 133 are substantially plane and have a thickness from only about  
25 0.2 mm to about 1 mm, preferably about 0.5 mm. They are adapted to bear elastically on said opposite faces 10a, 10b, 20a, 20b of each of the backs of said base sections.

As shown in figures 1 and 2 in particular, three longitudinal tongues 121, 122, 123, 131, 132, 133 as  
30 defined above are disposed in an arrangement resembling the shape of a winners' podium, as used at sporting events, on each edge 111, 112 of the plate 110, two end tongues 121, 122, 131, 132 being positioned on the top face of said plate 110 so as to be placed against the top  
35 face 10a, 20a of the back of the base section of each

length of trunking 10, 20, and a central tongue 123, 133 being positioned on the bottom face of the plate 110 so as to be placed against the bottom face 10b, 20b of the back of the base section of each length of trunking 10, 20.

These longitudinal tongues 121, 122, 123, 131, 132, 133 are rectangular.

These thin plane longitudinal tongues advantageously secure the plate firmly to the base sections of the trunking without forming an additional thickness impeding the fitting of the base sections of the trunking to the wall to which they must be fixed or installing electrical device supports in each of the base sections or routing electrical conductors or cables in the base sections.

Because the longitudinal tongues are thin, the connecting device can be used on any standard trunking base section without any special adaptation of the back of the base section.

Each group of longitudinal tongues provided on an edge of the plate adapted to be positioned adjacent a cut edge of a trunking base section sandwiches the back of the corresponding base section, onto which it is thereby clamped.

By means of these tongues, the plate 110 can be fitted to the base section of the trunking before it is fixed to the wall, the combination of the plate and the trunking, which is easy to manipulate, then being fixed to the wall.

The plate can instead be fixed to the wall first, and the trunking base sections then installed by inserting them between the longitudinal tongues of the plate, which has the advantage of holding the base sections in position before the installer fixes them to the wall, which makes his work easier, especially if he

is working alone.

Figures 3 and 4 show a variant of the connecting device 100 shown in figures 1 and 2; the essential difference is the different shape of the pillar 115, which is substantially a trihedron with the corners cut off; the pillar 115 is extended in two perpendicular directions by vertical partitions 119 extending as far as the transverse edges 111, 112 of the plate 110.

The partitions divide the connecting device 100 into two ducts for routing electrical conductors or cables isolated from each other.

On the other hand, the arrangement of the longitudinal tongue is identical to that of the connecting device 100 shown in figures 1 and 2 and is therefore not described again here.

The thickness e of the longitudinal tongues 121, 122, 123, 131, 132, 133 is identical to that of the longitudinal tongues 121, 122, 123, 131, 132, 133 of the connecting device shown in figures 1 and 2.

Figures 5 to 7 show one embodiment of a cover 200 of the connecting device 100 shown in figures 1 to 4.

This cover 200 has two parts 210, 220 articulated together by a flexible connecting part 230 forming a hinge, enabling different angular orientations of the two parts 210, 220 relative to each other, according to the relative angular positions of the two lengths of trunking to be connected by the connecting device 100.

As shown in figures 7b, 7c and 7d in particular, the two parts 210, 220 of the cover 200 can assume three different relative angular positions for angles between the lengths of trunking substantially equal to 85 degrees, 90 degrees and 95 degrees, one of the parts 220 locating under the other part 210 of the cover 200.

As shown in figure 7a in particular, the cover 200 is molded in one piece from a plastics material and when



it is removed from the mold it has an angle of about 72 degrees between its two part 210, 220.

5 The various angular positions of the lengths of trunking 10, 20 are obtained by slightly offsetting a cut edge 11 of one of the lengths of trunking 10 relative to the corresponding transverse edge 112 of the plate 110, as shown in figure 1 in particular, the range of angular variation being 5 degrees.

10 As shown in figures 5 and 6, each of the parts 210, 220 of the cover 200 has upstanding longitudinal rims 212, 213, 222, 223 which cover the walls 113, 113' on the longitudinal edges of the plate 110 of the connecting device 100.

15 The cover 200 hooks onto rims and clips 113a, 113b, 114 provided along the bottom edge of the longitudinal wall 113 carried by the plate 110.

The rims 113a, 113b locate the plate when it is placed along one or more walls, so that the walls do not impede fitting the cover.

20 Each part 210, 220 of the cover 200 has on its bottom face means 214, 224 for hooking it onto the length of trunking 10, 20.

25 The hooking means 214, 224 include longitudinal ribs 214b, 214a, 224b, 224a which hook over the inside and the outside of the rims 12a, 13a, 22a, 23a on the lateral flanges 12, 13, 22, 23 of the lengths of trunking 10, 20, in the same way as the cover sections, not shown, of the lengths of trunking.

30 Of course, in a variant, not shown, of the connecting device shown in figures 1 to 4 the plate 110 could have transverse ends adapted to be positioned adjacent cut edges of parallel lengths of trunking, to constitute a device for joining lengths of trunking extending in the same direction in the same plane.

35 A connecting device 100 as described above is

molded in one piece from a plastics material.

Figure 8 shows a different embodiment of the connecting device 100 according to the invention.

In this embodiment, the plate 110 of the device has two parts 110a, 110b with an inside corner between them. In a variant, not shown, the two parts could have an outside corner between them.

The two parts 110a, 110b of the plate 110 are fixed relative to each other, but in another variant, not shown, these parts could be articulated to each other by means of a junction part forming a hinge.

This corner device can be used to join three lengths of trunking 10, 20, 30 extending in three different directions; two lengths of trunking 10, 20 are located at the junction between a wall and a ceiling and have a shape specifically suited to that junction, and the third length of trunking 30 has a V-shaped base section descending from the ceiling toward the floor in the corner where the two walls meet.

Each edge 111a, 111b, 111c, 111d, 112a, 112b, 112c, 112d of each part 110a, 110b adapted to be positioned adjacent a cut edge of a trunking base section 10, 20, 30 is provided with longitudinal tongues disposed in an arrangement resembling the shape of a winners' podium, like the longitudinal tongues described with reference to figures 1 to 4.

Each edge 111a, 111b, 111c, 111d, 112a, 112b, 112c, 112d of each part 110a, 110b of the plate 110 includes two longitudinal end tongues 121a, 122a, 121b, 122b, 121c, 122c, 121d, 122d, 131a, 132a, 131b, 132b, 131c, 132c, 131d, 132d carried by the top face of each part 110a, 110b of the plate 110 and intended to be applied elastically against the top face of a back of a trunking base section or against the bottom face of a lateral flange of a trunking base section.

A central tongue 123a, 123b, 123c, 123d, 133a, 133b, 133c, 133d between the two end tongues and on the bottom face of each part 110a, 110b of the plate 110 is intended to be applied against the bottom face of a back  
5 or a lateral flange of a trunking base section.

The longitudinal tongues of the parts 110a, 110b of the plate 110 of the connecting device shown in figure 8 have shapes and thicknesses identical to those of the plates of the connecting devices shown in figures 1 and 4  
10 and are not described again in detail.

The connecting device has a top part in the shape of a bracket 110c pressed onto the ceiling with an orifice 110''c through it through which are passed fixing means for fixing the connecting device to the ceiling.

15 The top edge of the bracket has hooks 110'c, 110''c for hooking on a cover, not shown.

Of course, a connecting device of the above kind can be adapted to connect three lengths of trunking forming a baseboard and not at the junction between a wall and the ceiling.  
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The present invention is no way limited to the embodiment described and shown, any variant of which conforming to the spirit of the invention will be evident to the skilled person.